NURSE PRACTITIONER ROLE IN IMPROVING HEALTH OUTCOMES FOR MARGINALIZED ADOLESCENTS THROUGH LEVONORGESTREL INTRAUTERINE SYSTEM USE

by

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ABSTRACT

Adolescence is a life stage that is characterized by rapid growth, physical and emotional changes. It is also the beginning of sexual maturation which creates challenges that are inherent with risk taking. Adolescents are known to be at risk for unplanned pregnancy and associated negative consequences, but marginalized female adolescents are even more vulnerable. Prevention of pregnancy through access and availability of effective contraception is a key facet in meeting the sexual health care needs of this population. The purpose of this paper was to explore the nurse practitioner role in improving the sexual health of marginalized female adolescents through contraceptive prescribing practices, specifically through prescription and administration of the LNG-IUS. A review of current literature was undertaken to examine the prescribing practices of NPs and the use of the LNG-IUS in the identified population. NP prescribing trends and the potential for increasing access to contraception with positive health outcomes were identified themes in the literature, demonstrating that NPs are highly capable of improving the sexual health of marginalized female adolescents. Furthermore, the literature demonstrates that the LNG-IUS is an excellent and appropriate choice of contraception for this population and NPs can be secure in the decision to recommend, prescribe and insert the LNG-IUS for marginalized adolescent female patients requiring contraception.

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SECTION ONE

BACKGROUND & NEED

"Adolescence is a transitional period between childhood and adulthood. As a life stage it offers tremendous opportunities and challenges in the voyage to maturity" (Smith et al., 2009, p.4). The Provincial Health Officer of British Columbia (BC), Dr. Perry Kendall, wrote the forward for the 2008 BC Adolescent Health Survey and he provides rationale for conducting this survey. He indicates that the information is necessary in assisting society to successfully raise our children and also to meet obligations to children as set out in the United Nations Convention on the Rights of the Child. Kendall discusses four rights and argues that all children have: i) the right to survival; ii) the right to develop to the fullest; iii) the right to protection from harmful influences, abuse and exploitation; and, iv) the right to full participation in family cultural and social life (Smith et al., 2009). As a society we need to work toward ensuring that our children's rights are protected and one aspect of this includes preventing illness, promoting health and providing comprehensive health care so that all children can meet their full developmental potential. Offering comprehensive health care services can assist young people in successfully moving from the adolescent life stage into adulthood (World Health Organization {WHO}, 2002).

The adolescent population is known to be at risk for unplanned pregnancy and associated negative consequences, but marginalized female adolescents are even more vulnerable (Boivin, Roy, Haley, & Galbaud du Fort, 2005). If Nurse Practitioners (NPs) are to offer comprehensive health care to marginalized female adolescents, then they must attend to the sexual health care needs of this vulnerable group. Prevention of pregnancy through access and availability of effective contraception is a key facet in meeting the sexual health care needs of this population.

NPs have long provided health care services to vulnerable populations (Browne & Tarlier, 2008; Keeling, 2009) and they can play a significant role in improving the sexual health of marginalized female adolescents by increasing the accessibility to contraception generally, and to additionally provide the option of an effective but under-utilized contraceptive method, the intrauterine device.

The purpose of this project is to review existing current literature to answer the following question of inquiry:

1. How can nurse practitioners improve the sexual health of marginalized female adolescents through contraceptive prescribing practices, specifically through prescription and administration of the levonorgestrel intrauterine system (LNG-IUS)?

This question is further broken down into two sub-questions:

a) What are NP prescribing practices?

b) Is the LNG-IUS an appropriate method of contraception for marginalized female adolescents?

Background data will be presented in order to demonstrate the need and significance of the project. These data will include a description of the marginalized adolescent population and their health risks, the implications of unintended pregnancy, and the contraceptive methods used by Canadian women and adolescents. Social justice and equity will be discussed in relation to the ethical and moral obligation that NPs have in promoting the health of people, but especially those from vulnerable population groups. This will be followed by the literature review and synthesis of current existing knowledge of NP prescribing and the use of the intrauterine device in this population group. The findings will be summarized and discussed in regard to the

potential impact to the sexual health of marginalized female adolescents. Refer to Appendix A for the literature review search strategy and results.

Adolescence and implications of unplanned pregnancy

The World Health Organization (WHO) defines the period of adolescence as being between the ages of 10 and 19 years. It is a time of rapid growth, physical and emotional changes and the beginning of sexual maturation. Adolescents today face more challenges to their health and development than their parents and grandparents did, but the issues are largely preventable (2002). The health of adolescents can be negatively impacted by unprotected sexual activity that results in unplanned pregnancy. Approximately 14 million young women in the world between 15 and 19 years of age experience childbirth each year (Hobcraft & Baker, 2006). Monasterio, Hwang and Shafer (2007) argue that in the developed world, pregnancy during adolescence is generally thought to be a negative outcome of adolescent sexual expression. In Canada the most recently available data are from the year 2007 and reveal that 15 280 females who were 19 years of age and younger gave birth (Statistics Canada, 2010).

The consequences of unintended pregnancy for adolescent females can be serious for themselves as well as their infants (Saewyc, Taylor, Homma & Ogilvie, 2008; Dryburgh, 2007). Adolescent females are two to five times more likely to die in childbirth in comparison to older women (WHO, 2002). Disorders such as anemia, hypertension, eclampsia, and depression are additional negative health consequences (Dryburgh, 2007). The negative consequences for infants of adolescent mothers may include being born at low birth weight with many associated complications (Dryburgh, 2007) and these infants are at increased risk for physical abuse and neglect (Oringanje et al., 2010).

There are economic consequences that impact negatively on the lives of adolescent mothers and society. This population is more prone to living in poverty due to lack of education affecting their employment prospects and they are less likely than adult mothers to finish high school or attend postsecondary school (Dryburgh, 2007; Luong, 2008). Adolescent mothers are more likely to be single parents without a contributing income from a partner further predisposing them to living in poverty (Dryburgh, 2007). They may have to rely on government social assistance and welfare programs to meet their personal needs and are less able to contribute to tax revenues due to their unemployed status and lack of earned income (Luong, 2008; Oringanje et al., 2010). Adolescent females with children may find it difficult to find their way out of poverty and they may struggle to provide adequate care, food and shelter for their children.

In 2005 the number of induced abortions in Canada among the adolescent population exceeded the number of live births in the same population which were 16 349 and 14 013 respectively (Statistics Canada, 2008a; Statistics Canada, 2008b). This displays the extent in the use of abortion services by adolescents having to deal with an unplanned pregnancy. Black et al. (2009) assert that statistical data on abortion to live birth ratios shows a continual use of this service demonstrating that Canada is not adequately meeting the contraceptive needs of women. The risks associated with termination of pregnancy include pelvic inflammatory disease, infertility and occasionally death, more so for adolescents in parts of the world where the availability of reputable services for abortion do not exist forcing females to obtain them illegally by unsafe practitioners (WHO, 2002). The above information illustrates the need for prevention of unplanned pregnancy among marginalized female adolescents.

Marginalization and homelessness

Dictionary definitions of marginalization indicate that the process of marginalization is making or treating someone as insignificant, unimportant, and powerless within a group or within a society (Oxford, 1993; Merriam-Webster, 2010). Vasas describes the process of marginalization as individuals or groups of people being "...peripheralized..." (p. 194) or pushed to the fringes of society based on perceived differences from mainstream society. The term marginalization denotes disadvantage and this author contends that marginalization and social exclusion create vulnerability among certain populations leading to disparity of resources and power (2005). One factor that increases marginalization and therefore vulnerability in adolescents is homelessness. These definitions and descriptions facilitate one to make the assumption that homeless adolescents are therefore marginalized.

Some youth do not have a permanent address or home of their own and they rely on friends or extended family to temporarily provide shelter. This is frequently referred to as "couch surfing" or "doubling up" (Frankish, Hwang & Quantz, 2005). Hwang (2001) has attempted to define homelessness in order to reduce confusion and promote accuracy of research in this population. He differentiates homelessness into two categories named "absolute" and "relative". Absolute homelessness is "...the condition of people without physical shelter who sleep outdoors, in vehicles, abandoned buildings or other places not intended for human habitation" (p. 229). Relative homelessness is "...the condition of people who have a physical shelter, but one that does not meet basic standards of health and safety; these include protection from the elements, access to safe water and sanitation, security of tenure, personal safety and affordability" (p. 229).

The consequences of homelessness can be severe and devastating for those affected, their families, and to society in general. Homeless people are some of society's most vulnerable and often forgotten members. According to the 2001 Canadian Census 14, 000 people self-reported being homeless. It has been estimated that 8000 people access shelters each night in Canada and although these numbers are disturbing, some authors argue that the extent of homelessness is underestimated (Frankish et al., 2005; Hwang, 2001; Public Health Agency of Canada {PHAC}, 2006). This is due to lack of consensus in regard to defining homelessness and the inaccuracy of homeless counts which do not capture the numbers of individuals who are unable to access shelters or who choose to sleep outside. There are approximately 600 individuals sleeping on the streets each night in Vancouver, BC (Frankish et al., 2005; Hwang, 2001).

Homelessness has been increasing in Canada and BC since the 1990s and is related to several Canadian trends such as: (a) increased poverty from labor market and social program changes; (b) decreased availability of affordable housing; (c) decreased funding for social housing; (d) inability of the health care system to provide adequate care for persons with mental illness and addictions; and (e) social issues such as divorce, family breakdown, violence, abuse, racism and discrimination (BC, 2001a; Frankish et al., 2005; Usatine, 1994). These are predisposing factors, but homelessness does not recognize boundaries and fails to follow a direct path (Frankish et al., 2005). The potential for homelessness exists for all people. Key aspects of homelessness include the impact of increasing urbanization, its complexity of causes and heterogeneity in affecting individuals, families, females and males, all races and ethnicities, life-long Canadians and immigrants alike. Homelessness is a problem in rural communities of Canada, but it is more hidden and less visible than what can be seen in larger urban areas where the extent of the problem has sometimes reached crisis proportions (Frankish et al., 2005).

The Public Health Agency of Canada (PHAC) estimates that there are 150 000 street-involved youth in Canada (PHAC, 2006). There is acknowledgement that accurate statistical data are difficult to collect in this population, as many homeless adolescents do not access shelter and prefer to sleep on the streets making them more challenging to count. For example, approximately 75% of youth living on the streets of Toronto do not use shelters. The majority of street-involved or homeless youth are thought to be concentrated in the three major Canadian cities of Toronto, Montreal and Vancouver, but they also live in smaller rural areas throughout the country (Hwang, 2001).

A profile of the marginalized and street-involved youth in BC was formed as a result of a survey undertaken in nine geographical areas across the province during 2006. In this survey, 762 youth aged 12 to 18 years of age participated over a three month period. The average age that the participants left home or were asked to leave was 13 to 14 years of age. Forty percent of males and 34% of females indicated they did not leave home by choice. Their living accommodations were unstable and included streets, safe houses, squats, abandoned buildings, tents, cars, friend's homes and hotels. Within the marginalized adolescent population in BC, there are sub groups of persons who are disproportionately represented including aboriginal, gay, lesbian and bisexual people (Smith et al., 2007). According to Hwang (2001) there is an overall increased representation of Aboriginal people in proportion to non-Aboriginal people in the homeless population by a factor of 10.

Health Risks

Many studies have demonstrated the relationship between health and homelessness and this population suffers from infectious disease, infestations, acute illness, chronic health conditions, premature death, and are at risk for suicide, mental illness and addictions at much

greater rates than the general population (BC, 2001b; Frankish et al., 2005; Hwang, 2001; Usatine, 1994). The negative consequences of homelessness on the health of affected individuals result from exposure to the elements, substandard sleeping accommodations (e.g. floors, sidewalks), unsanitary living conditions, poor hygiene, malnutrition, substance abuse, mental illness, lack of access to medical care and social supports, trauma and crime exposure (Frankish et al., 2005; Hwang, 2001; Usatine, 1994). Many homeless individuals access emergency shelters and overcrowding in these places can result in the transmission of infectious disease and infestations (BC, 2001b; Usatine, 1994).

Mental illness and substance abuse also increase the vulnerability of homeless people to numerous illnesses (BC, 2001b; Usatine, 1994). It has been estimated that about one third of all homeless people suffer from some form of mental illness and substance abuse is six to seven times more prevalent than in the general population (BC, 2001b). Substance abuse, particularly injection drug use, increases the risk of acquiring viral hepatitis and HIV which further compromise the immune systems of homeless people predisposing them even further to other illness and disease (National Foundation for Infectious Disease, 2002).

Marginalized adolescents surveyed during 2006 in BC reported having more illnesses and disabilities affecting their daily lives than the adolescents in school who participated in the 2003 Adolescent Health Survey (AHS). Half of the participants went hungry at least once a month and 16% were hungry twice a week. They could not afford prescription medications and 18% did not have Medical Services Plan Care Cards. More than half said they had a diagnosed mental, emotional or learning condition or disability. The number of participants who reported one or more suicide attempts was 11% higher for males and 20% higher for females compared to the in school participants of the AHS (Smith et al., 2007).

A study of the mortality rate in street youth in Montreal demonstrated startling results with rates being 9 times higher for males and 31 times higher for females compared to youth who were not homeless (Frankish et al., 2005). Canadian homeless and street involved youth also have increased rates of HIV infection due to risks associated with participation in survival sex, having multiple sexual partners, lack of barrier protection during sex and drug use. This population is at increased risk for mental health conditions, substance abuse, assault, sexually transmitted infections and unplanned pregnancy (Boivin et al., 2005; Frankish et al., 2005; Hwang, 2001; Roy et al., 2004). These results demonstrate some of the disparities that marginalized adolescents face in their daily lives in comparison to those adolescents who are not marginalized. Discussing the role of the NP in reducing all these health risks is outside the scope of this project. The focus will therefore be the NP's role in promoting the sexual health of street-involved youth.

Current sexual health of the adolescent population

The Society of Obstetricians and Gynecologists of Canada (SOGC) indicates the average age of first intercourse among Canadian males and females to be 16.5 years (SOGC, 2006). Among marginalized adolescents the average age of first intercourse is 13.8 - 14 years which is significantly lower than the Canadian average (PHAC, 2006; Smith et al., 2007). Many adolescents have engaged in intercourse with more than one sexual partner which increases the risks to their health. In 2005 a study revealed that 41% of males and 29% of females between 15 – 17 years of age had reported having more than one partner in the past year (SOGC, 2006). The number of sexual partners for street-involved adolescents is much higher with the average reporting more than 17 lifetime partners and the rates of condom use are low with 50% not using them during their last sexual encounter. Several authors agree that marginalized youth are at

increased risk for consequences associated with unprotected sexual intercourse such as unplanned pregnancy (Boivin et al., 2005; Frankish et al., 2005; Hwang, 2001; Roy et al., 2004).

There were 41 643 total live births in BC in 2006. Of these live births, 19 occurred in women less than 15 years of age and 1452 in women between 15 – 19 years of age. Of the total live births 3.5% occurred in the adolescent population (BC Ministry of Health, 2006). According to a Statistics Canada report the teen pregnancy rate in Canada has been declining for the past several years which possibly relates to the increased availability of contraception and the increased awareness of the risks associated with unprotected sex (Dryburgh, 2007). Among surveyed marginalized adolescents in BC, 32% of those sexually active reported being pregnant or causing a pregnancy compared to 8% of the sexually active surveyed in school youth. Of this group, 12% had either been pregnant or caused pregnancy on more than two occasions (Smith et al., 2007). A United States study compared the pregnancy history of three groups of 14 – 17 year old females and concluded that 48.2% of female adolescents living on the street had been pregnant, 33.2% of females adolescents living in shelters had been pregnant and only 7.2% of those living at home were pregnant (Boivin et al., 2005).

Barriers to contraception

Multiple barriers exist that limit or prevent adolescents from using contraception and it is essential that providers of adolescent sexual health care are aware of what these are. Barriers may be related to the provider, user, systems, government and/or industry (Black, Francoeur, Rowe, Collins, & Miller, 2004).

Monasterio et al. (2007) discuss the importance and necessity of providers having specialized knowledge of the sexual health behaviors of adolescents and current trends that may be specific to individual communities and populations within those communities. The SOGC

calls for the inclusion of specific sexual health education and training curricula for health care students so that they have the competency and skills necessary to assist in contraception counseling and decision making. Adequate preparation with knowledge and skill in providing contraception increases the likelihood of practitioners discussing and recommending a variety of contraceptive choices with their patients (Black et al., 2004). Providers should also have a clear understanding of policies and laws regarding the care of minors, sensitivity to the unique needs of providing health care services that are acceptable to adolescents, and a comfort in being able to discuss sexual behavior with the population (Monasterio et al., 2007).

Contraceptive knowledge, motivation and behavioral skills influence individual choice and adherence to contraception. Adolescents need to have contraception knowledge of available methods, how to use them, potential side effects and benefits as well as the efficacy of each method so they can make informed decisions about the most suitable product for their needs. They also need to know what to do if they have problems with their chosen method and when to follow up with their health care provider. They may be misinformed and require correction of previously held beliefs about safety, side effects and efficacy. Increasing contraceptive knowledge increases the potential for adolescents to correctly and consistently use their chosen method therefore reducing their risk of unplanned pregnancy (Black et al., 2004; Monasterio et al., 2007; WHO, 2009).

Motivation to use contraception can be influenced by attitude, beliefs and perception of contraceptive methods and social norms. Discomfort with sexuality will limit the motivation of adolescents to approach the subject of contraceptive use with a health care provider and a partner in advance of need (Black et al., 2004). Concerns about confidentiality may also interfere with an adolescent's motivation to access sexual health care services. Some fear that their parents or

family members will find out they are engaging in sexual activity if they access services, but some may be receptive to parental involvement. Having an open discussion is important in the assessment process as some parents may assist financially to support their child's contraceptive choices. Respect for the adolescent client's decision in regard to confidentiality is important in the establishment of trust. Some also fear being judged and are concerned that their request for contraception is thought by the practitioner to be an indication that they are promiscuous (Monasterio et al., 2007). Black et al. (2004) concur and state, "Teens are a particularly vulnerable group in this respect, as they are often reluctant to seek information and help for contraception from their family physician" (p. 151). Contraceptive decision making and use is complex and requires behavioral skills for correct and consistent use. It takes individual recognition of being a sexually active person, seeking health care provider assistance in acquiring knowledge and use of methods, negotiation with partners, and actual use of the chosen method. Providers are essential in assisting adolescents to achieve the necessary behavioral skills to manage contraception. They can promote knowledge, assist in access, and provide tips on negotiation and comfort in discussing sexuality and contraception with partners (Black et al., 2004).

Contraception costs money and many adolescents, especially those who are marginalized, do not have the financial means to support the purchase of their chosen method. Some European countries have reduced the adolescent pregnancy rate by offering extensive sexual health education in their school systems and increasing the access to contraception by making it free or at the least low cost and widely available (French & Cowan, 2009; Monasterio et al., 2007). The United States of America (USA) on the other hand, has one of the highest rates of adolescent pregnancy among the developed countries which may be partially attributed to disagreement of

policy makers and government officials as to what is the best approach for prevention. While this disagreement continues, adolescents are faced with a barrage of messages through media that influences their decision making about sexual activity and prevention of associated health risks (Monasterio et al., 2007).

Canada falls in between the USA and European countries in regard to the sexual health of adolescents (Monasterio et al., 2007). Governments and private health insurance plans cover the cost of some contraceptive methods, but what is covered and what is not varies across Canada (Black et al., 2004). Quebec is the only province in Canada to offer full reimbursement of all hormonal contraceptives including the LNG-IUS (Black et al., 2009). The SOGC provides a compassionate program which decreases the financial barrier to oral contraception, but this limits the choice of contraception to oral hormonal methods only (Black et al., 2004). The BC Provincial Government currently provides coverage under Plan C for women on income assistance or disability for oral contraception and other contraceptives such as the LNG-IUS. The LNG-IUS is currently a benefit under the Fair Pharmacare program in BC also, which is a system for prescription coverage depending upon income level. Once a person's maximum ceiling for prescriptive medication costs has been reached, Fair Pharmacare coverage is initiated for the medications that are included as a benefit on this plan, and the person no longer has to pay (Sean H., Pharmacare Help Desk Technician, personal communication, July 9, 2010). There has been discussion in the media that recent provincial budgetary cuts will impact coverage of contraceptive devices with coverage through Plan C (income assistance and disability) being denied and coverage for oral hormonal methods continuing. If this occurs, it too limits access and choice in regard to contraception for women with low income, including marginalized adolescent females. According to some advocacy groups this is seen as a violation of women's

human rights, especially for those who cannot medically tolerate oral contraceptives or for those with mental disabilities that impair their ability to take OCPs as prescribed (Fournier, 2010). The inability to correctly or consistently use a contraceptive method is a barrier that may result in contraceptive failure and unintended pregnancy (Trussel, 2007).

The choice of contraceptive methods in Canada is limited in comparison to other countries as the governmental approval process in Canada takes a significantly longer time than it does for other countries. This may result in a reduced number of applications for new contraceptive methods. Some products have also been removed from the Canadian market by suppliers because they have not been well utilized in Canada such as Norplant (Black et al., 2004). This leads one to surmise the possibility of this being related to lack of provider knowledge and comfort in recommending and providing some of the newer methods of contraception that become available on the Canadian market.

Contraceptive methods and use in Canada

Data from a 2006 national cross-sectional survey of contraceptive use among Canadian women aged 15 – 50 years indicates that there is a wide range of contraceptive products available for family planning, but Canadian women are only using a limited selection of the available methods. There were 5597 survey respondents with 3253 meeting inclusion criteria of living in Canada, being sexually active with a male partner and not pregnant at the time of the survey. Condoms were most frequently used (54.3%), followed by oral contraceptives (43.7%) and withdrawal (11.6%). The method most often used by women 15 – 19 years of age were condoms (74.3%), oral contraceptives (66.6%) and withdrawal (17.3%). Respondents were able to choose more than one current method and more than 30% used both condoms and oral contraceptives with this occurring more often in the 15 – 19 years of age group. Methods such as

the LNG- IUS, intrauterine device (IUD), injectable depot medroxyprogesterone acetate (DMPA), transdermal patch and vaginal contraceptive ring were used by very few of the surveyed women. In fact, when combined together these methods were only used by 8.5% of the total surveyed women. Among the age group of 15 – 19 years the LNG- IUS is used by 0.5%, IUD 0.5%, DMPA 1.8%, transdermal patch 1.6% and the vaginal ring 0.9%. The authors of the survey results discuss the efficacy of oral contraception and condoms. These methods have low failure rates with perfect use, but 20% of the surveyed women reported inconsistent use (Black et al., 2009).

The data from this national survey are similar to the results from the 2008 Adolescent Health Survey of youth in BC schools with condoms, oral contraception and withdrawal being the top three methods of use among adolescents at 61%, 46% and 23% respectively (Smith et al., 2009). The 2006 survey of marginalized and street involved youth in BC demonstrated that 72% reported using an effective method of contraception that was further defined as including condoms, transdermal patch, vaginal ring, diaphragm/sponge and OCPs but the percentages of use were not further clarified with the exception of condoms. Among these surveyed youth 66% of 14 year olds and 53% of 18 years olds used condoms. A key difference that must be noted between in-school surveyed youth and marginalized youth is that 57% of the marginalized group used drugs or alcohol prior to their last sexual contact compared to 29% of the in-school group. Drug or alcohol intoxication increases the risk for not using contraception at all, or not using it correctly, which increases the risk for unplanned pregnancy (Black et al., 2004; Smith et al., 2007).

Trussell (2007) contends that it is necessary to counsel women trying to choose a contraceptive method of the pregnancy rates that occur during a person's typical use of a

product. In other words, contraceptives are not always used correctly or consistently which changes the overall rates of pregnancy for a particular method. This should be clearly articulated to women and compared to the pregnancy rates during perfect use. This assists in providing clarity regarding the efficacy of chosen methods when used by the average person and it is an indication of the probability of becoming pregnant in the first year without perfect use. Continuation of use is another factor that should be discussed. The acceptability of a chosen method in regard to the side effects, benefits and ease of use influence whether or not a woman will continue to use a contraceptive method or not. Table 1 provides a comparison of the differences in efficacy with typical and perfect use and the continuation rates of some of the contraceptive methods used by women in the United States.

Table 1 Unintended pregnancy rates among women after 1 year with typical and perfect contraceptive use and continuation rates of chosen contraception after 1 year of use (Adapted from Trussell, 2007).

METHOD	TYPICAL USE	PERFECT USE	CONTINUATION @ 1 YR
No method	**85%**	**85%**	
Withdrawal	**27%**	**4%**	**43%**
Male condom	**15%**	**2%**	**53%**
Oral contraceptives, transdermal patch & vaginal ring	**8%**	**0.3%**	**68%**
DMPA	**3%**	**0.3%**	**56%**
Copper-T IUD	**0.8%**	**0.6%**	**78%**
LNG -IUS	**0.2%**	**0.2%**	**80%**
Implanon	**0.05%**	**0.05%**	**84%**
Female Sterilization	**0.5%**	**0.5%**	**100%**
Male Sterilization	**0.15%**	**0.10%**	**100%**

The LNG-IUS and IUD (copper-T) have the lowest rate of pregnancy and discontinuation after one year of use with the exception of Implanon (not yet available in Canada) and sterilization. Typical and perfect LNG -IUS use results are equal with 0.2 % becoming pregnant in the first year of use and 80% still continuing use after one year (Trussell, 2007). This demonstrates the high efficacy and continuation rates of the LNG- IUS in comparison to other contraceptive methods. Black et al. (2009) suggest that the high efficacy and continuation rate for the LNG-IUS is due to it being a contraceptive method that requires lower compliance and demand upon the user. It does not require daily attention to taking pills and also requires no intervention just prior to coitus (Morgan, 2006). Several factors exist to explain why the LNG-IUS is not more frequently chosen as a contraceptive method.

Intrauterine contraception: benefits and drawbacks of the LNG-IUS

Intrauterine contraception (IUC), which includes the IUS or IUD, is the most widely used method of contraception worldwide with the exception of female sterilization, but this contraceptive method is not as highly utilized in the US or Canada. In North America only 2% of contraceptive using women use the IUD compared to 78% in Korea which has the highest rates worldwide, or Central Asian countries with rates 63% - 76% (d'Arcangues, 2007). The history of IUC in the US has had a profound effect on public and professional confidence of this contraceptive method in North America. The Dalkon shield IUD became available in the US in 1971 but the multifilament tail string that was different from the monofilament tail strings of other IUDs aided infective organisms in ascending into the upper genital tract resulting in severe cases of pelvic inflammatory disease (PID). It was taken off the market in 1974 by manufacturers who were concerned about legal implications and costs associated with pending lawsuits (d'Arcangues, 2007; Morgan, 2006). Morgan states "…the Dalkon Shield was linked to 18

deaths and 200, 000 pelvic infections, hysterectomies, and other gynecologic conditions" (2006, p. 464). Several other types of IUDs were removed from the market in the years following up to 1985 due to lack of confidence in IUDs in general and decreased sales of the devices (d'Arcangues, 2007).

The LNG-IUS is the first medicated intrauterine device available (Sitruk-Ware, 2006). It is 32 mm long and T-shaped with a monofilament thread attached to a loop on the stem. It has a reservoir that contains 52 mg of levonorgestrel that is slowly released at a rate of 20 ug/day initially and decreasing to 11 ug/day over the five year period that it is approved for use (Sitruk-Ware, 2006; Rose, Chuadhari & Peterson, 2009). The frame has barium sulfate on it which makes it visible on x-ray (Rose et al., 2009). Locally released levonorgestrel acts on the endometrium to reduce proliferation and cause thinning. The system itself causes the release of foreign-body mediators within the endometrium. These things combined create an inhospitable environment for sperm. The device also acts to thicken cervical mucus which prevents sperm penetration and transport (Black et al., 2004; Grimes, 2007; Morgan, 2006; Rose et al., 2009; Sitruk-Ware, 2006). Furthermore, anovulation occurs in some women who use the product (Black et al., 2004; Grimes, 2007; Rose et al., 2009).

The primary effects of IUC occur early in the reproductive process and prevent sperm from fertilizing ova. Several authors argue that IUC is not an abortifacient as was previously thought (Grimes, 2007; Morgan, 2006; Rose et al, 2009). This is based on tubal flushing studies that compared women who used an IUD and women who did not use any form of contraception. The participants engaged in intercourse at midcycle and were then surgically sterilized 48 – 120 hours after having a luteinizing hormone surge. Half of the women who did not use contraception had fertilized ovum in their tubes while no fertilized ovum were recovered from

the tubes of the IUD using women. Studies have also been conducted to examine the rates of ectopic pregnancy in women using IUDs. Results demonstrated that the risk of ectopic pregnancy is lower in IUD using women which leads to consideration that they prevent fertilization (Morgan, 2006; Grimes, 2007). Despite this research though, some of the literature continues to include the remote possibility of the postfertilization effects of IUDs when discussing the mechanism of action (Black et al., 2004; Yen, Saah, & Adams Hillard, 2009). Morgan (2006) indicates that there is a remote possibility of postfertilization effects on pregnancy with all contraceptives except for barrier and sterilization methods. This information may be of importance to providers and users of IUDs with personal beliefs that conflict with abortion.

During the first four months of use the LNG-IUS can cause unpredictable inter-menstrual bleeding which is inconvenient and may be a drawback for some women. Over time though, it decreases menstrual blood flow by 70% - 97% and decreases dysmenorrhea. Amenorrhea occurs in about 20% of women after one year of use which may be a benefit for some, but not for all (Morgan, 2006). Adolescents and younger women have indicated that they rely on the regularity of their menstrual cycle to ensure they are not pregnant, so amenorrhea associated with the LNG-IUS may not be desirable in this age group (French & Cowan, 2009).

The copper IUD has the reverse effect of increased menstrual blood flow and increased dysmenorrhea which results in higher discontinuation rates after one year in comparison to the LNG-IUS. The copper IUD costs less than the LNG-IUS, but the efficacy is also lower (Morgan, 2006; Trussell, 2007). The cost of the LNG-IUS is initially higher than other forms of contraception, but it is a long acting method of contraception which over time is more cost effective. Even the money saved from a decrease in purchasing feminine hygiene products adds

to the overall cost effectiveness of this method (Morgan, 2006). In BC Shoppers Drug Mart pharmacy sells the LNG-IUS for $374.00. It is covered by some employment medical plans and Non Insured Health Benefits for status First Nation persons, but the copper IUD is not (K. Yaworski, personal communication, May 19, 2010). The copper IUD has no hormonal side effects, whereas the LNG-IUS does in 3% of users, and these effects may include changes to complexion, breast tenderness, mood changes, nausea and headache (Morgan, 2006). The hormonal side effects from the LNG-IUS are much less than what occurs with all other methods of hormonal contraception (Yen et al., 2009).

The LNG-IUS must be inserted into the uterus by trained clinicians such as NPs, midwives or physicians which may be a barrier to use, especially in rural or remote areas if providers are not available (Black et al., 2009; French & Cowan, 2009; Sitruk-Ware, 2006; Yen et al., 2009). According to the College of Midwives of BC, contraceptive prescribing requires certification as a specialized practice and there is not yet a process in place for this to occur (2009). Having more skilled providers such as NPs available to prescribe and insert IUC would be beneficial. The procedure only takes minutes, but is invasive and can cause abdominal cramping and pain during and after insertion (French & Cowan, 2009; Sitruk-Ware, 2006; Yen et al., 2009). There is a small risk for complications that may occur in 1.8% of users and these include severe or prolonged cramping, uterine perforation, and expulsion (Morgan, 2006; Yen et al., 2009).

The LNG-IUS is just one of several contraceptive methods available to women, and it will not be suitable for, or acceptable to, all clients. As mentioned previously, providers can influence whether or not the LNG-IUS becomes the contraceptive method of choice. They share their knowledge and perceptions of contraception with their patients and if their knowledge is

outdated or their perceptions negative they will be less likely to recommend a product (d'Arcanques, 2007; Morgan, 2006). It takes an average of 17 years for current research to reach text books that are used in training health care providers and this perpetuates the continuation of practices based on past research rather than evidence (Postlethwaite, Shaber, Mancuso, Flores, & Armstrong, 2007). Many providers continue to have concerns about IUC related to the Dalkon shield (d'Arcanques, 2007; Morgan, 2006; Postlethwaite et al., 2007). Many more are unclear of who is eligible for IUC and have concerns that use in nulliparous, adolescent, unmarried and non-monogamous females is unsafe (French & Cowan, 2009; Morgan, 2006; Yen et al., 2009).

Implications for nurse practitioner practice

Contraceptive technology is an advancing area of research and NPs must keep abreast of new knowledge in order to provide comprehensive evidence based sexual health care services. Inadequate knowledge of health care practitioners, personal biases, personal preferences and policies that are not based on current evidence may limit the quality of and access to contraception. It is important for NPs to be competent in providing information and counseling about the various contraceptive methods and associated risks, benefits, efficacy and use. Furthermore, if a particular method requires advanced skills involving insertion, fitting or removal, then practitioners including NPs should have the necessary knowledge and training prior to being able to offer the method. Having an adequate supply and stock of required materials available is essential (Monasterio et al., 2007; WHO, 2009).

NPs in BC educational institutions acquire the necessary knowledge and skills for contraceptive management. They have prescriptive authority and advanced knowledge that enables them to independently assess and diagnose a person for suitability and risk for various contraceptive methods and to prescribe from within the complete range of available methods.

NPs have the regulatory authority to not only prescribe IUC, but also to insert the devices as long as they meet certain criteria. This includes having received adequate instruction, preparation and clinical supervision until competent to perform the skill independently. NPs providing IUC insertions must have sufficient opportunities in their practice to perform the skill so they are able to maintain their competency to do so (CRNBC, 2010b).

In BC RNs who have completed a certification program in reproductive health as approved by the College of Registered Nurses of BC (CRNBC) are capable of diagnosing and treating STIs as well as providing contraceptive management. They do not have prescriptive authority, but can "…administer, compound and dispense Schedule I medications without an order" (CRNBC, 2010a, p. 2). All the medications they offer must be provided by their employer requiring them to then be employed or have a contract with an employer. Nurses who are certified in remote nursing certified practice are also certified in reproductive health. Nurses working in this capacity are provided with decision support tools to assist them in carrying out approved activities within set parameters (CRNBC, 2010a). This is an important nursing role that will help in increasing access and availability to some types of contraception but not to all. According to the decision support tools for reproductive health, RNs must refer women requesting IUC to primary health care providers such as NPs or physicians (CRNBC, 2009).

NPs work with all population types and ages across the lifespan including adolescents and children (CRNBC, 2010b). Therapeutic relationship building is done through the establishment of trust and the ability to work in partnership with individuals to meet their health care needs in illness, promotion of health and prevention of disease (Anderson & O'Grady, 2009). The care that is provided by NPs is holistic and based upon evidence, advanced clinical knowledge and skills (Tracy, 2009). The unique combination of nursing and medicine woven

together assists in the development of an approach to care that may be more acceptable to adolescents. Sensitivity to and understanding of the adolescent developmental level and the issues that influence their sexual health is essential for NPs to be able to provide a comprehensive level of care that is both socially and ethically responsible.

SECTION TWO

ETHICAL CONSIDERATIONS

Social justice

There is an inextricable link between social justice, equity and health. It is imperative to recognize and understand how these concepts are threaded together and influence the well-being of people in a world where inequities exist.

> Social justice is a matter of life and death. It affects the way people live, their consequent chance of illness, and their risk of premature death. We watch in wonder as life expectancy and good health continue to increase in parts of the world and in alarm as they fail to improve in others (WHO, 2008, p. iii).

Health has been defined as a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity, and it has been asserted in the Declaration of Alma-Ata that it is a fundamental human right and a significant global concern that will require a coordinated approach from social, economic and health sectors in order to achieve it (International Conference of Primary Health Care, 1978).

Reproductive health care has been described as having moral value and is therefore sometimes controversial in nature, but it is also considered to be vital for improving women's health and is considered to be a human right (Black et al., 2004; Stewart, 2007; Terki & Malhotra, 2004; WHO, 2009). Advances in contraceptive technology have had a significant

effect on the lives and health of people worldwide and Stewart (2007) states, "These technologies have enabled men and women to decide when and whether to become parents, a profound advance that has indelibly shaped modern life" (2007, p. 1). Adolescents are disproportionately affected by unintended pregnancy and because there is a trend toward earlier sexual maturation and a change toward later marriage, they are vulnerable to the risks associated with unprotected sex for a long period of time. In fact, some adolescents may be sexually active for 10 years or more before considering marriage and family planning (WHO, 2002). As the statistical data presented earlier in this paper demonstrate this time period may be extended even further for marginalized adolescents who initiate sexual intercourse at much younger ages. This makes it imperative that this population has access to effective contraception for pregnancy prevention.

Equity

Equity is not an easy term to define and although it relates to fairness and justice, it must be considered in the context of its use. Inequity though, in the context of health status, pertains to differences "…that are unnecessary, avoidable and unfair" (Canadian Nurses Association {CNA}, 2009a, p. 3). Inequity exists in the health status of people between different countries in the world, and it also exists within individual countries. The conditions and circumstances in which people live and manage health and illness are influenced by political, social and economic forces and the unequal distribution of power and resources such as income, goods and services (International Conference of Primary Health Care, 1978; WHO, 2008). The WHO emphasizes the link between inequity in health and degrees of social disadvantage. They contend that health and illness are on a social gradient in which worsening health follows lower socioeconomic status (WHO, 2008). This is true for sexual health as well and Serrant-Green (2005) discusses

the inequity of poor sexual health that exists more extensively among youth, minority and marginalized groups of people. This author indicates that the inequity of sexual health faced by these groups was the impetus for the WHO to focus on this theme as an important aspect of their work. There is no exception to the existence of health inequity in Canada. In fact, great disparities exist between some population groups and regions across the nation as the statistical data on the homeless and marginalized female adolescents demonstrated previously in this paper. The WHO maintains, "the development of a society, rich or poor, can be judged by the quality of its population's health, how fairly health is distributed across the social spectrum, and the degree of protection provided from disadvantage as a result of ill-health" (2008, p. iii).

Accessibility

Marginalized and homeless people have many barriers that reduce their ability to access health care services despite the universality of Canada's health care system. Many do not have personal identification including health care cards as a result of loss or theft, and they lack the ability to make and keep medical appointments due to the transient nature of their lives without a permanent address and telephone. Access to treatment and care for mental health and substance abuse issues is limited and requires lengthy waits. Following medical, pharmacologic and dietary advice is almost impossible for this population which leads to increased levels of health care utilization in emergency settings and hospitalization rates that are five times higher than the general population (Frankish et al., 2005; Hwang, 2001). Hwang (2001) argues that the Canadian health care system is failing to adequately address the needs of homeless people.

The International Planned Parenthood Federation (IPPF) strives to increase access to sexual and reproductive health information and services worldwide. This organization identifies its vision as being "…universal access to sexual and reproductive health care for women, men

and young people" (Terki & Malhotra, 2004, p. 2). Their strategic plan includes a goal of tackling the unmet sexual and reproductive health care needs of disadvantaged people including the marginalized and poor (Terki & Malhortra, 2004). NPs and RNs have a history in providing health care services to disadvantaged populations in remote and rural settings of Canada and the US. "Outpost" and "Frontier" are only two of several titles given to nurses who worked in expanded NP-like roles over the past several decades. These nurses were often hired in isolated settings working with disadvantaged people such as Aboriginal or immigrant populations where higher levels of health inequity were evident (Browne & Tarlier, 2008; Keeling, 2009). NPs are in the forefront of the health care system and are in a key position to provide and increase access to health care for marginalized populations, and to reduce health inequity by increasing awareness of social justice issues in their daily practice. This includes understanding the multiple barriers that marginalized adolescent females face when attempting to access contraception and assisting in breaking them down.

In order to reduce inequity among populations, NPs must be prepared to advocate for change at a higher level for the development of appropriate social, political and economic policies. Browne and Tarlier (2008) agree and state, "NPs must be prepared to exercise their voice in influencing the social and political trends that are shaping such inequities" (p. 89). These authors identify the ability for NPs to work in a variety of health care settings in rural and urban areas with diverse populations including the more vulnerable members of society that are afflicted by mental health, substance abuse, and poverty (Browne & Tarlier, 2008). Serrant-Green (2005) emphasizes the importance of nurses having awareness not only of the medical aspects of sexual health, but also of the historical, social and political influences. This awareness is essential to effecting change and improvement to the sexual and overall health of vulnerable

populations as is the ability to appropriately counsel, educate and prescribe contraceptive products.

SECTION THREE

NURSE PRACTITIONER PRESCRIBING PRACTICES

The health risks of marginalized female adolescents and the consequences of unplanned pregnancy in this population have been demonstrated along with an examination of contraception methods and use by Canadian women and adolescents. This next section aims to examine the evidence in relation to NP prescribing practices and care. There have been concerns identified in the literature that nurse prescribing will increase the risk for adverse patient outcomes through prescription errors, over-prescribing and prescribing for incorrect diagnoses (Van Ruth, Mistiaen, & Francke, 2008). The current evidence however, refutes these concerns and will demonstrate that NPs are prescribing medications in a manner that meets the competency criteria, is similar to that of physicians, increases access, does not result in increased adverse outcomes and provides for the delivery of a high level of patient health care that is satisfying to patients. There is a paucity of literature that pertains specifically to NP prescribing and much of the available research on prescribing is embedded in research of NP practice relating to consultation, diagnosis and treatment (Van Ruth et al., 2008); therefore, some of the evidence being presented has been extracted from this other research. The purpose of this paper is not to provide a direct comparison between the NP and physician role; however, much of the existing literature available at this time is comparative. This research will be discussed with a view to providing some insight into NP prescribing practices, rather than as a means of comparing NP and physician roles. As the NP role grows in BC, Canada, and internationally, research will need to be conducted that is specific to NPs and their unique role.

Prescribing trends & potential for increasing access to contraception

Advanced practice nursing is a phenomenon that is occurring globally with many countries having either implemented the practice or currently in various stages of implementation. Increased global interest in the advanced practice nursing role is being driven by a human resource shortage in health care and consideration that this role will be instrumental in increasing access (Pulcini, Jelic, Gul, & Loke, 2010). Pulcini et al. surveyed 174 informants of the ICN International Nurse Practitioner-Advanced Practice Nursing Network to describe international trends in relation to the role of NPs. This research study aimed to more specifically describe nomenclature, education, settings, scope of practice, regulation and politics in relation to NPs and there were participants from 32 countries. Results demonstrated that there are at least 13 different terms used in reference to advanced practice nursing around the world which include: i) nurse practitioner (family, pediatric, emergency room, adult, primary care, gerontological, community health, acute care); ii) advanced practice nurse; iii) nurse specialist; iv) midwife and; v) nurse anesthetist (2010). This variation in nomenclature has the potential to cause confusion and misunderstanding of what advanced nursing practice is. This is reflected in the variation and differences that exist with licensure requirements, scope of practice and prescriptive authority of advanced practice nurses around the world, among individual countries and according to state or province as in Australia, US and Canada (Pulcini et al., 2010).

When asked which factors facilitated the role of the advanced practice nurse in their country, 58% of respondents mentioned having strong support for nursing practice, 80% discussed the need for increasing health care providers in underserved or rural areas, and 72% identified consumer demand for increased access. There were responses from 24 countries in regard to prescribing and of these, 63% indicated having prescriptive authority. This survey and

the results are limited by the small number of participants from within individual countries and the requirement of the researchers to choose the most common response from among multiple responses to apply at the country level. The small number of individual participants limits the researchers in being able to generalize their views to a national level of the respective countries; however, the strength of the research lies in its descriptive nature and provision of an international glimpse at NP practice (Pulcini et al., 2010). The results of this study demonstrate how lack of access to health care and health care providers has influenced the development of the advanced practice nursing role throughout the world. It also demonstrates the emerging practice of prescribing by NPs that is occurring globally. Pulcini et al. (2010) state, "NP-APNs represent a sleeping giant for healthcare systems world-wide, particularly in developing countries, to meet the need for increased access to quality health care" (p. 37).

In the US NPs have prescriptive authority in 49 states but the breadth of their ability to prescribe varies state to state. In the US the pharmaceutical industry collects data on the prescribing practices of physicians, but does not separate out the prescribing of NPs and physician assistants from these data (Scudder, 2006). Scudder argues that the data are flawed because there are more than 100, 000 NPs and 45, 000 physician assistants (PAs) in the country with potential to prescribe and the prescriptions that are written by them are being attributed to physicians. This does not provide an accurate assessment of the prescribing activities of NPs or PAs and underestimates their contribution (2010). This author summarizes and compares data from a 2004 and 2005 research sample that was taken from a longitudinal study of NP prescribing practice. Convenience sampling was undertaken and descriptive statistics were used for data analysis.

Of the 224 participants in 2005, 60.6% provided services for adults, 31.5% for family, 20.7% for geriatric, 15.8% for women's health, 8.7% for pediatric, and 7.5% for psychiatric patients. There was a range in the number of patient encounters that NPs had per day with 3.5% seeing less than 5 patients and 2.7% seeing more than 30 patients. Seventeen percent saw 6-10 patients and 76.7% of NPs saw between 11 to 30 patients per day. The average number of prescriptions written in a day also ranged with 2.8% reporting no prescriptions to 10.6% indicating more than 25. In between, 33.3% wrote 1-5, 37.5% wrote 6-15 and 15.7% wrote 16-25 prescriptions per day demonstrating that the majority of NPs from this sample are prescribing. The number of prescriptions per patient encounter was not obtained in this study although this information is collected for primary care and specialty physicians leading the author to acknowledge this as being an area for further research (Scudder, 2010). The 2004 sample of 800 NPs were asked to choose categories of medications they prescribe from. The results demonstrated that NPs are prescribing a wide range of pharmaceuticals with 65.5% (508) of participants saying they prescribed from the category of hormones, including OCPs (Scudder, 2010).

This research provides an indication of the role that NPs are playing in providing access to contraception but it does not further describe the individual products that are being provided. The relatively small sample sizes of the data collected and analyzed limits the findings of this descriptive study from being generalized to the broader NP profession; but, with more than 100 000 NPs practicing in the US, potential for meeting the contraceptive needs of marginalized female adolescents can be visualized, especially considering that 76.6% of the NP respondents in this study were seeing between 11 and 30 patients per day. Having broad prescriptive authority is fundamental for NPs to be able to provide health care that reflects full implementation of the

role. There is an acknowledged need stemming from this study for further research of NP prescribing to be implemented due to much of it being hidden or imbedded in the research of physician prescribers (Scudder, 2010).

Goolsby (2005) summarizes the prescribing patterns of NPs who completed the American Academy of Nurse Practitioner (AANP) 2004 National Nurse Practitioner Sample Survey. The survey aimed to collect data to describe the characteristics of NPs and their prescribing practices. The sample was randomly selected and was estimated to include 25% of the overall US NP population. Responses were received from an estimated 17% of the overall NP population which is a fairly high return rate providing good representation of the original 25% who were mailed surveys. This study is limited though in that 75% of the total NP population was not surveyed. Results demonstrate that NPs wrote an average of 19 prescriptions per day and the top two drug classifications most frequently prescribed were NSAIDS and antibiotics. The percentage of respondents from this study who indicated that they prescribed contraceptives was approximately 55%. Privately practicing NPs wrote 20.1 prescriptions per day in comparison to privately practicing physician colleagues who wrote 22.2 per day (Goolsby, 2005). This is an indication that the number of prescriptions being written by NPs closely reflects the number of prescriptions being written by physicians. NPs practicing in rural areas and in college health settings were most likely to prescribe (Goolsby, 2005). Possibly this is a reflection of the increased number of NPs practicing in rural settings or settings not traditional to physician practice and it demonstrates improved access to health care and pharmaceutical products including contraception.

A cross-sectional study by Larson, Palazzo, Berkowitz, Pirani and Hart (2003) examined the contribution of NPs and PAs in providing access to care in Washington State. Data was

primarily obtained from Washington State health professional licensure information and from a survey that was included with renewal forms of NPs, physicians, and PAs who renewed between April 1998 and May 1999. NPs provide 9.4% of generalist care, PAs provide 11.7% and generalist physicians provide 78.9%. There are increasing numbers of female physicians making up the generalist physician workforce in Washington State, but less are willing to work in non-urban settings as rural practice is considered somewhat unattractive to female physicians. More NPs than PAs or physicians are practicing in geographic health service areas that are determined to be short of health care professionals (Larson et al., 2003). This reveals the willingness and ability of NPs to practice as primary care providers in rural settings. Although this study did not specifically discuss prescribing, its results demonstrate the role of NPs in increasing access to care therefore increasing access to prescriptions and contraception.

Perry, Thurston, Killey and Miller (2004) carried out a qualitative grounded theory study to evaluate the effectiveness of a NP addition to a physician medical clinic in increasing access to care. It was a small research study, but revealed that the NP addition increased the access to health care for the community. Patients were able to obtain same day appointments or at least have one within one to two days which eliminated the need for a waiting list. Government targets of patients being able to access primary care within 2 days were being met following the NP addition. Most of the staff thought that increased access benefited patients by improving quality of care. The overall numbers of appointments increased at the clinic and practitioners were more satisfied with the time they had to provide care. The NP's schedule enabled an increased flexibility to appointment times as her schedule was different from the physicians in the clinic. Patients and staff felt that having a female practitioner was beneficial for those preferring to see a woman rather than a man (Perry et al., 2004). The NP addition did not only increase access to

health care, the flexibility of scheduling and the ability for patients to choose between a female or male provider broadened this community's health care choices. The NP in this study was described by participants as meeting their needs by being approachable and providing thorough physical exams, health related education and reassurance. The care offered was limited though by her inability to prescribe medication due to not having prescriptive authority. Clinic staff thought this restricted access to care because some patients were reluctant to see the NP again due to the inconvenience of having to wait for a physician to sign a prescription or returning to the clinic to pick up a prescription at a later date (Perry et al., 2004).

In the US there are both public and private providers for contraceptive services. Public providers are primarily NPs or PAs and private providers are obstetrician-gynecologists (OBGYNs) or physicians (Landry, Wei & Frost, 2008). A nationally represented surveyed research study examined the differences between provision of contraceptive care by public and private providers in the US by obtaining data on the types of services provided, other services offered, contraceptive counseling topics, problems contraceptive users face, the influence of insurance policies and ways to improve contraceptive use. The patients accessing NP care in public clinics including health department family planning, Planned Parenthood or other clinics such as community health centers were more often than not of young age, from a minority group or somehow disadvantaged (Landry et al., 2008). Once again, this reveals the role of NPs in providing health care services for marginalized populations and increasing their access to care. More specifically in this study it demonstrates access to sexual health care and contraception.

More than 97% of all provider types prescribed or dispensed oral contraception and injectable hormonal contraception with the exception of family physicians of which only 92% prescribed or dispensed injectables. Significant ($p<.001$) differences were noted in the

prescribing and dispensing of three other contraceptive methods one of which was the IUD. NPs and PAs practicing in Planned Parenthood clinics (89%) and OBGYNs (89%) were more likely than NPs or PAs practicing in health departments (45%) or other public clinics (57%) and family physicians (39%) to prescribe or dispense the IUD. Overall, public providers which consist of NPs and PAs in this study prescribe and dispense the IUD more frequently than family physicians (Landry et al., 2008).

Landry et al. (2008) identified gaps between ideal services for contraception and what is actually being provided. The counseling provided by all provider types was similar on the initial visit with the patient and 11 topics being covered, but on subsequent visits 70% of public providers (NPs & PAs) took another sexual history to explore any patient changes and only 43% of family physicians did so. Public providers and OBGYNs were more likely than family physicians to enquire about side effects and patient satisfaction with contraception choices. A significantly higher proportion of public providers (77-92%) discussed correct and consistent use of the patient's chosen method on each visit in comparison to family physicians (41%). The authors note that these differences could possibly be explained by the frequency in which the different providers offer contraception services. A large proportion of patients accessing public services are seeking contraception (Landry et al., 2008). Perhaps NPs and PAs are more comfortable and confident in prescribing and dispensing due to the increased frequency in their practices. Besides the gaps in counseling services, these authors identified that many providers in the public and private clinics are not offering comprehensive contraception services because they are not recommending, prescribing and dispensing from the full range of available products. It is essential that women understand their options so they can choose the most suitable method for their situation in consultation with their health care provider (Landry et al., 2008).

The above review of literature demonstrates the importance of NPs in having prescriptive authority that will enable them to offer comprehensive health care to meet the needs of their patients. Full prescriptive authority and sufficient NP positions can increase and broaden health care access to all populations including marginalized female adolescents thereby improving health related outcomes.

Outcomes of nurse practitioner prescribing and care

In Canada, NP practice is guided by the Canadian Nurse Practitioner Core Competency Framework that was created in conjunction with provincial and territorial regulatory nursing bodies, CNA, NPs and other stakeholders. There are four broad categories that encompass the individual competencies that beginner NPs must have for entry to practice. These include: i) health assessment and diagnosis; ii) health-care management and therapeutic intervention; iii) health promotion and prevention of illness, injury and complications; and, iv) professional role and responsibility. It is the second of these categories that the competencies of prescribing fall within. This document indicates those NPs who are determining treatments and prescribing them do so with knowledge that is theory driven and evidence-based in consideration of the uniqueness of the person or population being treated. NPs must have advanced knowledge of pharmacology that will assist them in prescribing carefully and appropriately as well as being able to manage the follow-up and educational needs of patients (CNA, 2005).

This next review of literature will present examples of the role that NPs are providing in regard to prescribing, but the prescribing practices are not all set in the context of NP prescribing of contraception due to there being limited available data. The reviewed articles will provide some examples of the outcomes of NP prescribing and care. Of the articles accessed for this project, three were randomized controlled trial (RCT) research articles that included a

component examining NP prescribing (Dierick-van Daele, Metsemakers, Derckx, Spreeuwenberg & Vrijhoef, 2009; Kinnersley et al., 2000; Venning, Durie, Roland, Roberts & Leese, 2000). The Venning et al. RCT was undertaken with the intent of comparing cost effectiveness of physicians and NPs when accessed for same day requested primary care services. This research took place in 20 different practice settings in England and Wales and the data available for analysis were taken from 1316 consultations provided by 651 physicians and 641 NPs. Patients were randomized to NP or physician care. The NP group provided fewer prescriptions than physicians, but the difference was not statistically significant and the health status of the patients after two weeks was the same. The NP group provided more opportunistic screening services, ordered more diagnostic tests and investigations and asked patients to return more frequently than physicians, and there was still a 12.5% lower cost associated with the NP care. The results associated with cost however, were not statistically significant. The researchers argue that if lifetime training were included in assessment of cost, the physician group costs would be even higher. Patients assigned to the NP group indicated a higher level of satisfaction following their consultations (Venning et al., 2000).

Kinnersley et al. implemented a RCT to discern if there were differences in the care that persons accessing same day services would receive from NPs in comparison to physicians. The settings included 10 different general practices in south Wales and south west England with 1368 participants being included and randomized to care between six NPs and the practicing physicians. Primary outcomes measured included immediate patient satisfaction, symptom resolution after two weeks and resolution of concerns after two weeks. The secondary outcomes measured included care in the consultation (e.g. patient information), resource use (e.g. prescriptions), follow-up consultations, and patient intention to manage similar occurrences.

There was a significantly higher level of patient satisfaction overall with care provided to children by NPs and in three practice settings out of seven for adult consultations. The resolution of symptoms and concerns were decreased in most patients who received care by both NPs and physicians with no differences noted between the groups. There were similar outcomes in regard to provided prescriptions, diagnostic investigations and referrals to secondary care, but there was a significant difference reported by the patients who received care from NPs in regard to education and management of their illness. The positive outcomes demonstrated in this research signify the high quality of care that patients receive from NPs in primary care settings (Kinnersley et al., 2000).

A Dutch RCT by Dierick-van Daele et al. (2009) was executed with the aim to review care processes and outcomes of 1501 patient participants who accessed first point of care with 12 NPs and 50 physicians. The NPs in the study had an average of 12 years of general nursing experience but were all new NP graduates while the physician participants had an average of 16 years of experience. The study was undertaken in 15 general practice sites in the southern area of the Netherlands during 2006. The NPs in this study did not have full prescriptive authority and physicians were always accessible to consult and provide validation of prescriptions. The care provided by NPs in this study was appreciated by the patients equally to the care provided by physicians and the quality of the care as perceived by the patients was also equal resulting in similarly high levels of satisfaction. There were no statistically different outcomes in regard to patient health status, use of medical resources or in the use of clinical practice guidelines Dierick-van Daele et al., 2009).

Three systematic reviews have been examined for the purposes of this project (Horrocks, Anderson, & Salisbury, 2002; Laurant et al., 2009; Van Ruth et al., 2008). Horrocks et al.,

conducted a systematic review of 11 randomized controlled trials and 23 prospective observational studies that compared NPs to physicians providing care at first contact in primary care settings for a variety of health problems. Studies that were included had to provide data relating to outcomes of patient satisfaction, health status, costs and process of care which included consultation length, number of prescriptions, investigations, referrals, admissions, follow-up, patient adherence or quality of care. The overall results of this review indicate that patients have increased satisfaction with NP provided care and their health outcomes are positive and comparable to those of physician provided care. There were more investigations made by NPs and the consultations were longer but no differences were noted with prescriptions, return consultations or referrals. The quality of care provided by NPs was determined by the authors of this review to be at least as good and in some ways better than that of physicians (2002).

A Cochrane systematic review was undertaken by Laurant et al. (2009) with the objective of evaluating what was termed "…doctor-nurse substitution…" in primary care settings. Studies included measured outcomes of health status, process of care and resource utilization and there were 25 articles from 16 research studies included in the review. Findings again revealed no notable differences between NP and physician care in regard to health outcomes of patients, process of care or resource utilization. What was noted as being different was increased patient satisfaction for nurse provided care, longer consultation times again, but with increased information being provided to patients. The review authors general conclusions are that appropriately trained nurses produce a high quality of care and health outcomes that are just as good as that provided by physicians, but they caution that the data are limited by the quality of research with only one of the 16 studies being adequately powered to assess equivalence of care. Several of the studies had limitations with methodology and the follow-up time frame with

patients was usually under 12 months. Despite the limitations of the reviewed research, the authors assert that the evidence is supportive of the investigated nurses being competent and capable of providing clinical care to patients in the roles that were assigned to them (Laurent et al., 2009).

The third systematic review examined was conducted specifically to explore the effects of nurse prescribing of medication. The researchers attempted to determine the effects of nurse prescribing compared to physician prescribing on the number and types of prescribed medications, the patient outcomes, the effects to nurse and physician outcomes, and the effects to the health care system. There were 23 studies included and the authors say that most were at high risk of bias with the exception of two. The studies included examined the range of nurse prescribing and not just independent nurse prescribing. The overall results were positive for nurse prescribing with most prescribing medication for a similar or lower percentage of patients than physicians although two of the studies indicated that nurses prescribed for more. The choices in medications by nurses were sometimes different than the choices made by physicians, but the patient health outcomes were comparable, clinical parameters similar or improved, quality of care was the same or improved and patients were generally just as satisfied or more satisfied. This review was unable to confirm benefits of workload or time savings for professionals (physicians) or cost savings for the health care systems as the research studies did not specifically address these outcomes, but the results demonstrated an improvement in health care access (Van Ruth et al., 2008).

Cipher, Hooker and Guerra (2006) conducted a study of data obtained from the National Ambulatory Medical Care Survey that involved an examination of prescriptions provided by NPs, PAs and physicians. The aim of this study was to explore the role of NPs and PAs by

examining prescribing behavior in primary care and compare to physicians. More specifically, the characteristics of providers and patients and the type of prescriptions were analyzed. The representative sample included 88, 346 visits that occurred between the years 1997 – 2002 in ambulatory care settings in both metropolitan and nonmetropolitan areas. Results of this research indicated that there was no significant difference between the three provider groups in regard to the number of medications prescribed per visit, the types of therapeutic classes being provided, the number of times controlled substances were provided, and the types of patients being prescribed for. The authors of this study acknowledge the limited data available examining medication prescription errors of NPs and PAs, but assert that what is available suggests that NPs and PAs are prescribing cautiously and appropriately (Cipher et al., 2006).

The last of the articles reviewed is of a study by Rappaport and Iyer (2009) which compares the ambulatory care practice patterns of NPs, PAs, and physicians alone and in combination with a physician. Prescribing practices, diagnostic testing, screening and counseling services were examined while controlling for diagnosis. The study is a retrospective secondary database analysis from a national survey in the US with data obtained from the years 1997 to 2006 and the chosen diagnoses of essential hypertension and allergic rhinitis which represent both chronic and acute illnesses. Combination types of visits that included a NP or PA with a physician prescribed significantly more medications than the other types of provider visits alone. The medication choices of the three provider types were generally similar for patients with the chosen diagnoses; however, there were minor differences noted in the ranking of some medications by provider type. The combination of providers ordered more diagnostic testing and screening than individual providers. NPs and PAs provided more counseling services than physicians alone or in combinations of physicians with a NP or PA. The authors argue that their

results demonstrate support for the use of non-physician care providers such as NPs or PAs to increase accessibility to lower costing care while maintaining high quality which may be especially beneficial to populations in underserved areas (Rappaport & Iyer, 2009).

The above review of literature and research data indicate NP prescribing patterns to be similar to physician prescribing patterns with similar outcomes and possibly increased patient satisfaction. Although the data presented above in regard to NP prescribing does not all specifically pertain to contraception, it is the best data that is available; and therefore, it may be reasonable to expect that NPs will also prescribe contraception in an appropriate and safe manner that will promote the health of marginalized female youth by increasing their access to contraception and the LNG-IUS which they are educated and trained to insert in BC, Canada.

LNG-IUS use for marginalized adolescents

As mentioned previously in this paper, intrauterine contraception (IUC) is not well utilized in North America despite high rates of use in some countries. Rationale has already been provided as to why this is occurring; however, a more in-depth examination of literature will be provided to explore the appropriateness of the LNG-IUS as a method of contraception for marginalized female adolescents.

The WHO has developed criteria for medical eligibility of contraceptives through collaboration with nine different agencies and 34 individuals who comprised an expert working group that was internationally represented by 23 different countries. This group met in 2008 to review and update the recommendations for the 4th edition. The goal is to provide guidance for the development or revision of national guidelines for contraceptive use and to improve access to and quality of family planning services. The group was able to reach consensus on the recommendations for eligibility criteria after reviewing the evidence that was primarily obtained

through systematic reviews. Four categories of recommendations are provided regarding contraceptive use in persons with certain characteristics or medical conditions: 1) No restriction for use; 2) advantages generally outweigh theoretical or proven risks; 3) theoretical or proven risks generally outweigh advantages; and, 4) unacceptable health risk with use. Recommendations are made for both initiation of use and continuation of use and clarifications and evidence are also presented to assist practitioners in making clinical judgment decisions (WHO, 2009).

In reference to the provision of contraception to adolescents, the WHO asserts that this population is eligible to use any of the recommended contraceptive choices available and should be given access to a variety of methods. "Age alone does not constitute a medical reason for denying any method to adolescents" (2009, p. 11). Any potential risks related to contraceptive use must be balanced against the risk of pregnancy and considered in the context of the unique individual rather than making blanket guidelines to not provide to certain groups of people (WHO, 2009).

The LNG-IUS is a WHO recommended category 2 for use from menarche to <20 yrs. There is some conflicting data that indicates nulliparous females are at increased risk of infertility with LNG-IUS use, but nine well conducted studies provided evidence that there is no increased risk making it a category 2 condition (WHO, 2009). The SOGC and IPPF concur with this recommendation (Black et al., 2004; Terki & Malhotra, 2004). The SOGC asserts that IUC may be successfully used by this population and it is a misconception that it is contraindicated (Black et al., 2004). Research from a 2001 case control study demonstrated that there was no association between the use of a copper IUD and increased risk of infertility by tubal occlusion

in nulliparous women with low risk for STIs (Kelly & Rudinsky, 2007). Deans and Grimes (2009) maintain "…restricting IUD use for fear of tubal infertility is not warranted" (p. 422).

Prager and Darney reviewed evidence relating to LNG-IUS in nulliparous women. They discuss clinician concerns of increased risk of expulsion and uterine perforation with use in nulliparous women and argue that it is unlikely for nulliparous women to be at increased risk for either event in comparison to parous women (2007). The LNG-IUS (Mirena) product monograph states that the Mirena should not be the first choice of contraception by young nulligravid females; however, they provide a qualifying statement that says controlled clinical trials were conducted in parous women 18 years of age and older. Possibly this is a liability concern of the manufacturer, especially in light of the WHO and SOGC recommendations for use in this group following review of current evidence (Bayer, 2010; Black et al., 2004; WHO, 2009).

Nulliparous women may have more mechanical problems with IUC insertions due to the smaller diameter of the cervical canal or uterine cavity and this could increase discomfort. Bradycardia and syncope related to insertion discomfort and a vagal response is more common in nulliparous women (Grimes, 2007; Morgan, 2006). The use of misoprostol, osmotic dilators, NSAID prophylaxis or paracervical anesthesia may facilitate insertion and reduce discomfort (Deans & Grimes, 2009; Grimes, 2007).

First-trimester spontaneous or induced abortions are WHO category 1 conditions and the device can be inserted immediately following the event (2009). Bayer mentions this as acceptable practice as well in the Mirena product monograph (2010). Second and third trimester abortions are category 2 and 3 conditions respectively (WHO, 2009). It is estimated that between 39% and 52% of all induced abortions occur in nulliparous women who have experienced contraceptive failure which increases their risk for subsequent unplanned pregnancy. Post-

abortion may be an opportune time for insertion as these women are often highly motivated to prevent further pregnancy and because the cervix has already been dilated, procedural discomfort is reduced (Prager & Darney, 2007; Yen et al., 2009). A large WHO research study and a Cochrane review demonstrated the safety of post-abortion IUC insertions with no increased risk of infection or expulsion rates (Harper et al., 2008).

History of having pelvic inflammatory disease (PID) with a subsequent pregnancy is classified as a WHO category 1 for LNG-IUS initiation and continuation of use. Without subsequent pregnancy the WHO category is 2 for initiation and continuation (WHO, 2009). This refutes past belief that history of PID is a contraindication for IUC. With current PID the WHO category for insertion is 4 and for continuation it is 2. It is not necessary to remove a contraceptive device if diagnosed with PID unless the patient wishes for this to be done. It may be left in place for continued use while the patient is being treated with appropriate antibiotic therapy as long as an informed decision is being made in relation to her current risk factors for STIs and PID. There was no difference in clinical outcomes for women treated with PID who had the device removed compared to those who did not (WHO, 2009).

Current purulent cervicitis, chlamydia or gonorrhea infections are WHO category 4 conditions for initiation of LNG-IUS and category 2 for continuation of use. If the patient acquires an STI during IUC use, appropriate antibiotic therapy should be initiated. The device can be left in place if desired by the patient and an informed decision is made after consideration of current STI and PID risk factors. The WHO provides clarification of evidence with these recommendations and they contend that there is no evidence that IUC insertion in women with STIs increases the risk of PID in comparison to no insertion. The risk of developing PID following IUC insertion among women with an STI is higher than in women without an STI, but

the absolute risk is still low (Mohllajee, Curtis, & Peterson, 2006; WHO, 2009). In other words IUC itself does not cause PID.

Twelve WHO clinical trials of IUC were analyzed to examine the incidence of PID among IUC users and it was determined that the incidence is very low and is mostly related to current STI at time of insertion. Of the 22, 908 IUC insertions that were evaluated in this analysis, there were 1.6 cases of PID per 1000 woman years and the highest incidence occurred within the first 20 days following insertion (Shulman, Hess, Arias, London, & Wysocki et al., 2009). A review of 365 articles relating to six research studies was done for a WHO Expert Working Group of international family planning experts. The studies provided indirect evidence regarding the incidence of PID with current STI at time of insertion and revealed the incidence rate to be approximately 0-5%. With modeling calculations done based on existing research, the incidence of PID caused by IUC insertion with a current STI is 0.15% when the incidence of Chlamydia and gonorrhea in the general population is 10% and STI screening is done (Mohllajee et al., 2006). Vaginitis including bacterial vaginosis and trichomonas vaginalis, other STIs, high risk for HIV and HIV infection are all WHO category 2 conditions for insertions and continuation of use. AIDS is a category 3 condition for initiation, unless doing clinically well on ARV treatment which is then a category 2 condition for initiation. Both AIDS and treated AIDS are category 2 conditions for continued use. Viral hepatitis is a category 1 condition for both initiation and continued use (WHO, 2009).

Being at increased risk for STIs is considered a WHO category 2/3 for initiation of IUC and a category 2 for continued use. If the risk for STI transmission of Chlamydia or gonorrhea is very high, then the category is 3 (WHO, 2009). Additional comments by the WHO identify the concern related to patients of younger age groups being at increased risk of STIs due to sexual

behavior. Grimes argues that the risk of PID associated with IUC is overstated because of poor early research, but more recent rigorous research and reviews of literature substantiate the low risk of infection and infertility with IUC users (2007). The SOGC practice guidelines emphasize the importance of discussing the risks and benefits with potential users as well as alternative methods so they are making an informed decision regarding IUC (Black et al., 2004). Patients must be informed that barrier protection with condoms is also recommended for protection against STIs (WHO, 2009). The IPPF states that condoms should be recommended in addition to IUC for patients who are at high risk for STIs (Terki & Malhotra, 2004). This illustrates that they do not consider being at high risk for STIs to be an absolute contraindication for use. Yen et al., (2009) argue that even though adolescents are at increased risk for STIs and therefore PID, the risk of developing PID can be avoided by STI screening which should be done for women of all age groups.

A Cochrane review was conducted to examine the literature and evidence in assessing the effectiveness of prophylactic antibiotic use prior to IUC insertion in decreasing PID, unscheduled visits and discontinuations within three months. Six articles were reviewed from four studies which demonstrated a marginally significant reduction in unscheduled patient visits, but no other significant benefits in regard to decreasing PID or discontinuation of IUC. The authors of this review state, "The overriding message…is that contemporary IUD use is safe, with or without use of prophylactic antibiotics. This holds true for populations with a high prevalence of sexually transmitted diseases, as is the case in much of Africa" (Grimes & Schulz, 2009, p. 4). The use of prophylactic antibiotics at point of IUC insertion is not routinely recommended in low-risk populations (Deans & Grimes, 2009; Grimes & Schulz, 2009). The IPPF and other authors believe they should be considered for patients coming from high STI

prevalence settings when STI screening is not always possible and IUC is desired (Deans & Grimes, 2009; Terki & Malhotra, 2004). Presumptive treatment of gonorrhea and chlamydia in adolescent populations has also been proposed as a tool for use prior to IUC insertion (Deans & Grimes, 2009). Furthermore, the patient must fully understand the risks and benefits and should be counseled to observe for symptoms of PID, especially in the first month following insertion (Terki & Malhotra, 2004).

Several authors contend that the LNG-IUS may actually provide a protective role in preventing PID. The progestin effects from the steady release of levonorgestrel acts on the cervix to cause a thickening of cervical mucous which may protect against ascending genital tract infection (Deans & Grimes, 2009; Morgan, 2006; Prager & Darney, 2007; Rose et al., 2009). A RCT that compared the LNG-IUS to the copper IUD in both parous and nulliparous women actually revealed a lower rate of PID after 36 months in the LNG-IUS using women compared to the copper IUD using women. This effect was particularly noticeable in women who were under 25 years of age (Prager & Darney, 2007).

Use of the LNG-IUS in marginalized female adolescents remains somewhat unclear but emerging evidence is supporting LNG-IUS use in this population. The WHO medical criteria has been expanded now to the degree that practitioners may use their clinical judgment in assessing the risks and benefits of LNG-IUS use for patients at increased risk of STIs. The evidence and current guidelines do not absolutely contraindicate use in this population group. In fact, much of the above presented evidence supports IUC use with careful consideration of the patient's unique context, behaviors, motivation for contraception, willingness and ability to make an informed decision regarding IUC for pregnancy prevention. Careful screening and appropriate treatment of STIs prior to LNG-IUS insertion along with thorough counseling of PID symptoms and the need

for dual protection with condoms to prevent STI transmission will assist in increasing the safeness of this contraceptive method in the marginalized female adolescent population.

SECTION FOUR

IMPLICATIONS, RECOMMENDATIONS AND CONCLUSIONS

As of 2009 there were approximately 2000 NPs in Canada (CNA, 2009b). The profession remains in its infancy with great potential for growth. There is an increasing need for primary health care services in the country which are related to an aging population, shortages of primary health care providers and increasing health care demands (Gould, Johnstone & Wasylkiw, 2007; Romanow, 2002). In many parts of Canada, especially rural and remote areas, some people lack access to health care services. Their needs remain unmet or there are lengthy delays resulting in poor health outcomes (Romanow, 2002).

The purpose of this project was to answer the question of inquiry: *How can NPs improve the sexual health of marginalized female adolescents through contraceptive prescribing practices, specifically through prescription and administration of the levonorgestrel intrauterine system (LNG-IUS)?* To fully answer the main question, it was broken down into two sub-questions that would direct the review of literature to examine NP prescribing practices and the suitability of the LNG-IUS in the marginalized female adolescent population. Current evidence has been provided and discussed to answer this inquiry. NPs are highly capable of improving the sexual health of marginalized female adolescents and the LNG-IUS is a suitable method of contraception for use in this population.

NPs are ideally positioned with advanced practice knowledge and clinical skills to assist in increasing accessibility to health care (Browne & Tarlier, 2008). Romanow (2002) argues that Canadians clearly value and support the current health care system which is based on principles

of equity, fairness and unity. Access and equality in health care are considered to be rights of Canadian citizenship rather than privileges of status or income. Romanow calls for Canadians and Canadian health care workers to adjust our concepts of medicare in order to adapt to the realities of the 21st century. Rather than working in silos with the focus primarily on hospital and physician driven illness care, the system must shift to include a focus on prevention of illness and health promotion with an integrated and collaborative approach involving multiple participants. This will require health care workers to challenge their beliefs and values related to their traditional roles and scopes of practice (2002).

The literature proves and demonstrates that NPs provide increased access to care for patients. NP knowledge is grounded in nursing but is inclusive of medicine making the role unique and suitable for addressing the health care needs of marginalized adolescent females. Donnelly (2003) asserts:

> Nursing's focus is on people; its blend of medical, behavioral, and social science expertise; and its commitment to caring, teaching, counseling and supporting patients are the characteristics of nursing that make nurses so uniquely qualified to provide advanced practice and primary care services to the public (p. 171).

The health care needs of marginalized female adolescents are unique requiring a unique approach to the development of a therapeutic relationship that will be conducive to promoting their sexual health. NPs working with adolescents must be aware of their specific physical, emotional and educational requirements relating to health and contraception. "This understanding serves to bridge the differences between APNs and their patients and enables patients to share power and collaborate with APNs to develop a realistic plan of care" (Spross, 2009, p. 171).

Contextual understanding of the adolescent population's developmental level and the cultural and social influences to their health is essential for relationship building. The unique role of the NP includes developing therapeutic, caring partnered relationships with patients. This makes their contribution to primary health care different from that of other health care providers. They establish trusting relationships in order to be effective in their interactions. NPs provide illness care, health promotion and disease prevention. Patient and family education, coaching and guidance are fundamental aspects of NP care (Anderson & O'Grady, 2009). NPs practice holistically to provide health care that is reflective of the unique and complex biological, psychological, intellectual, social and spiritual needs of people. Partnerships are formed that are patient centered and therefore therapeutic resulting in high satisfaction rates with NP care. Holistic approach, therapeutic partnership building, expert clinical knowledge, advanced skills, reflective practice and evidence based care are characteristics of advanced nursing practice that add value to health care (Tracy, 2009).

Leadership and advocacy fall under the professional role and responsibility domain of the CNA competencies for NP practice (CNA, 2005). Social justice, equity and access are issues that NPs working with marginalized populations may need to address in the provision of care (Browne & Tarlier, 2008). Promoting access to health care and contraception for marginalized female adolescents may involve NP leadership and advocacy to evoke health policy changes at individual, local, regional or national levels. The knowledge and skills for this work are nurtured and developed at a beginning level during the educational preparation of NPs (Spross & Hanson, 2009). NPs must also have knowledge of an individual patient's financial resources or potential options for insurance reimbursement and funding when recommending or prescribing contraception (Hanson & Bennett, 2009). As mentioned earlier the cost of the LNG-IUS varies

depending on coverage; therefore the NP knowledge of different populations and social economic barriers plays a large role in provision of care. Advocacy skills may be required to negotiate access to the LNG-IUS among marginalized adolescents who are financially disadvantaged.

The scope of NP practice and prescriptive authority varies across Canadian provincial or territorial jurisdictions and NPs must be aware of the specific differences if choosing to move between these jurisdictions (CNA, 2009b). In BC it is within the scope of practice for NPs to prescribe and insert IUC (CRNBC, 2010b). The literature reviewed for this project has demonstrated that NPs prescribe safely and appropriately with good health outcomes. Patients report a high level of satisfaction following NP care and access to health care, and therefore contraception, is improved.

There are several available options for contraception, and the LNG-IUS is an excellent and appropriate choice for marginalized female adolescents. It poses few risks for users and is highly effective. Adherence is improved in the adolescent population because it does not require the efforts of daily contraceptive use (Black et al., 2009). Review of the evidence refutes previous beliefs that IUC cannot be used in women who are adolescent, nulliparous, or have previously had a STI or PID. All potential users of IUC should be carefully screened and treated for STIs and not just marginalized female adolescents. Utilizing this approach along with recommendations for barrier protection, which is also necessary for STI prevention with all contraceptive choices, will further minimize any potential adverse effects associated with the use of the LNG-IUS in this population. Adolescent sexual health will be promoted by prevention of pregnancy and the associated negative outcomes in this population.

The future of IUC use is dependent upon increasing research and disseminating evidence to practitioners that is current and relevant so they are adequately informed and prepared to recommend this method of contraception to their patients (Kelly & Rudinsky, 2007). Health care providers must reflect on personal beliefs and assumptions when providing care to adolescents and obtaining informed consent involves more than just receiving the approval to proceed with a treatment or intervention. "...Informed choice based on scientific evidence and sound ethics must be the cornerstone of all reproductive health care" (Hobcraft & Baker, 2006, p. 352). The evidence has been presented and NPs are well suited for ensuring that patients are able to make informed decisions regarding their reproductive health care needs including contraception. NPs practice ethically by utilizing an evidence based approach to care and they should be confident in the decision to recommend the LNG-IUS as a method of contraception for this population. NPs can promote the sexual health of marginalized female adolescents through their prescribing practice and should be utilized to prescribe and insert the LNG-IUS for marginalized female adolescents who require contraception.

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Appendix A: Literature Review Search Strategy and Results

Search strategy

- University of Northern British Columbia library accessed for the literature search
- Electronic data bases and websites searched for relevant articles
- Data bases included Medline, CINAHL and the Cochrane Database of Systematic Reviews
- Websites searched for clinical practice guidelines included the WHO, SOGC and IPPF
- Electronic searching of cited references was conducted
- Key word, subject and MESH heading searches were conducted to obtain relevant literature
- Search terms included:

  -prescribing, prescribing patterns

  -contraception, IUD, IUC, mirena, levonorgestrel intrauterine system

  -marginalized, street involved, high risk, female, youth, adolescence

Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
Published in English	Published in non-English language
Published between 2000 - 2010	Published prior to 2000
Research studies of any type	Non-research-editorials, book reviews, news releases
Relevant to NP prescribing (not specific to contraception or intrauterine contraception)	Prescribing by non-NPs (nurses, practice nurses, PAs)
Relevant to topic of IUC (LNG-IUS) in marginalized adolescents	IUC not related to adolescent, marginalized populations etc.

Results

- Literature search process resulted in 74 articles relating to NP prescribing
- Literature search process resulted in 42 articles, 2 books, 3 clinical practice guidelines and 1 product monograph relating to use of LNG-IUS in the marginalized and/or adolescent population
- Other references were provided for supporting information in regard to background and need
- Rigorous analysis of the literature was undertaken to ensure suitability for inclusion in the project
- Articles were either included or excluded based on the criteria listed above
- Literature was categorized into recurrent themes that for prescribing included: i) trends and potential for increasing access and; ii) outcomes of NP prescribing and care
- LNG-IUS literature was not categorized into themes but provided a review of its use in the identified population